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ABSTRACT

Several theories of story structure are reviewed in this paper, including those of D. Rumelhart, R. Schank, and T. van Dijk. Examples are given of Rumelhart's story grammar consisting of elements such as setting, episodes, events, and reactions that must be present to form a coherent structure. Schank's contribution to story structure theory is said to be the concept of scripts, an elaborate causal sequence of actions listed in hierarchical order and often based on experienced situations causing certain expectations, such as knowledge and expectation of what should happen in a restaurant. Van Dijk's contributions are noted as the proposal of a basic story structure and the development of three rules to explain the comprehension process (the rules of generalization, deletion, and construction). Five implications for instruction based on the works of these men are suggested. (MKM)

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Story Structures; Comments on Recent Literature

Gordon Peterson

During the past few years there have been attempts by some psychologists (often identified as cognitive psychologists and/or psycholinguists) to describe story structures. It is the purpose of this article to introduce the topic of story structures by briefly commenting on the ideas of the three most important authorities, David Rumelhart, Roger Schank, and Teun van Dijk

Rumelhart

To demonstrate the structure of stories is different from random strings of sentences, Rumelhart (1975) gives the following example:

> (1) Margie was holding tightly to the string of her beautiful new balloon. Suddenly a gust of wind caught it. The wind carried it into a tree. The balloon hit a branch and burst. Margie cried and cried.
>
> (2) Margie cried and cried. The balloon hit a branch and burst The wind carried it into a tree. Suddenly a gust of wind caught it. Margie was holding tightly to the string of her beautiful new balloon.

In these two sentences, according to Rumelhart, the first one is a coherent story whereas the second, even though it consists of the same sentences, is not. After developing this point in considerable more detail, he goes on to suggest a story grammar which is required to make a string of sentences into a story. His story grammar is similar to the grammar of a sentence, but its elements are such things as episodes and events rather than nouns and adjectives.

Rumelhart's story grammar consists of the six rules presented in Table 1. Table 2 shows the elements in the Margie story applied to

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the six grammar rules, and Table 3 shows the structure generated by the six grammar rules applied to the Margie story.

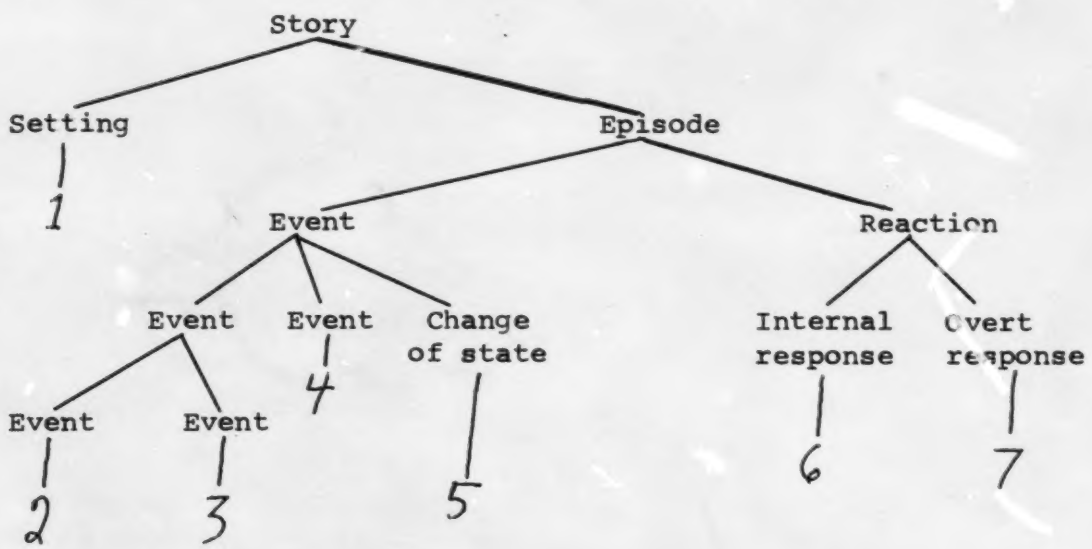
Table 1
The Six Grammar Rules

Rule 1 Stories consist of a Setting followed by an Episode.
Rule 2 Settings consist of a set of States (conjoined propositions).
Rule 3 Episodes are Events which involve Reactions.
Rule 4 An Event can be any of several alternatives: an episode, a change of state, or an action carried out by characters.
Rule 5 A Reaction consists of two parts, an Internal Response and an External Response.
Rule 6 The Internal Response consists of Emotions/Desires.

Table 2
The Units of the Margie Story

(1) Margie was holding tightly to the string of her beautiful new balloon.
(2) Suddenly, a gust of wind caught it
(3) and carried it into a tree.
(4) It hit a branch
(5) and burst.
(6) (sadness)
(7) Margie cried and cried.

Table 3
The Grammar Rules Applied to the Margie Story



Referring back to the two examples given by Rumelhart, the second example cannot be regarded as a story with a coherent structure because it does not begin with a setting and because it does not have a series of related events leading to a reaction.

The major difficulty with Rumelhart's grammar is it is directly applicable only to the simplest stories and stories with the traditional beginning-middle-ending. His grammar is not applicable to stories with more than one setting and for stories that begin with a change of state or reaction. But modified rules could be developed to deal with more complex stories.

Rumelhart also has ideas about summarizing a story. When a story is transformed into a tree grammar, the information in the higher branches would be part of the summary whereas the information on the lower branches would not be included. Also, a summary should state causes and motivation. An appropriate summary for the Margie story should state something like "Margie cried when her new balloon hit a branch and burst."

Mandler and Johnson (1977) adapted Rumelhart's story grammar into what they call story "schema" and conducted a research study to test their ideas. The chief differences from their schema and Rumelhart's grammar is Mandler and Johnson's schema is applicable to more complex stories and it is based on reader general knowledge as well as knowledge about story structures. Following is a modified summary of their rules: 1. a story consists of setting and events; 2. setting consists of time, locale, protagonist, and other basic information necessary to begin the

story; 3. the beginning contains a statement of the basic problem; 4. the development consists of internal and external reactions by the protagonist that are presented as causally related events that lead to a climax; 5. the ending consists of the outcome that is a result of the preceeding. Mandler and Johnson suggest several implications: 1. the more a story conforms to an ideal structure the better student recall; 2. the underlying structure will be recalled better than the surface specifics; 3. causally connected episodes will be better recalled than temporally connected episodes; 4. additions of new materials in the recall will occur when the story does not contain basic aspects; and 5. distortions will occur when the text is ambiguous or violates an ideal structure.

In their study first grade children, fourth grade children, and college students read selections with varying degrees of a clear structure and they found, in support of their ideas, that comprehension was based on a student's understanding of story schema. The chief limitation of this study was it did not consider enough student variables, such as socioeconomic status and comprehension ability.

Schank

An important contribution was made by Schank (1975, 1977) when he suggested story comprehension is related to what he calls "script." A script is an elaborate causal sequence of actions listed in hierarchical order; a script is based on often experienced situations that causes certain expected sequences of episodes in specific situations. Specifically, scripts are associated with the definition of specific situational nouns. Examples of scripts include restaurant, football game, birthday party,

and classroom. Following is the restaurant script suggested by Schank:

Script: restaurant
Roles: customer, waitress, chef, and cashier
Reason: hunger for customer and money for the others

Part 1: Entering: into restaurant
find table
sit down
Part 2: Ordering: receive menu
look at menu
decide
tell waitress
waitress tells chef
Part 3: Eating: waitress gets food
receive food
eat food
Part 4: Leaving: ask for check
leave tip
pay bill to cashier
exit.

The main implication of this is the more knowledge of specific situations the reader has the greater will be the comprehension. According to Schank, the comprehension of stories is the process by which new information received from print gets treated in terms of the old information already present in memory and knowledge of everyday events in the real world and this serves as the impetus for understanding stories.

Another contribution by Schank is realizing the importance of character goals. When a reader does not have knowledge of a script, the reader can try to induce future happenings by using character goals: a character in the story has a goal as basic motivation, this triggers certain events, and finally the goals are resolved. What is most important is not the specific surface situation but the underlying motive or goal.

The major limitation of Schank's idea about script is it applies directly to the simplest of stories, like Rumelhart's idea. It assumes

there is one script operating at a time, and does not take into consideration that more than one script occurs simultaneously, such as the restraurant script and the birthday party script taking place at the same time. But, as with Rumelhart, this is a minor problem that can be resolved.

van Dijk

Important contributions have been made by van Dijk in his ideas about story structure and comprehension rules.

Following is the basic story structure suggested by van Dijk:

1. Narrative is made up of Account plus Moral
2. Account is made up of Setting plus Episode
3. Episode is made up of Happening plus Evaluation
4. Happening is made up of Complication plus Resolution.

To help explain the comprehension process van Dijk developed three rules: generalization, deletion, and construction. For example in the sentence "Peter has a dog and three cats. He also has a parakeet, etc." a reader could generalize and delete this into "Peter has several pets." In the sentence "John went to the bank to cash a check" a reader would assume, through a constructive process, such normal conditions as the bank was open and the bank had money.

Poulsen and associates (1979) conducted a study to investigate van Dijk's ideas. They had four- and six-year-old children listen to stories with varying degrees of causally and temporally related events and found the children tried to make sense out of the less structured stories by using their knowledge about the nature of stories. The chief limitations of this study are it directly only applies to listening and

not reading comprehension, and the study did not consider enough student variables, such as IQ and socioeconomic class

Educational Implications

Although there is an obvious lacking of theoretical statements and research data, it seems certain educational implications may tentatively be warranted.

1. Students should have, or be given, the necessary prerequisite knowledge or experiences before they read a story.

2. Teachers should attempt to relate the story to something the readers already know or have experienced.

3. A story should be readable, i.e. the selection should have a clear structure with the specifics integrated into the structure.

4. Students should be taught to automatically make inferences that are necessary for comprehending a story.

5. Teachers should use a tree diagram to show the structure of a story and also to show the most important aspects that should be included in a summary.

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